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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/613,720
Filing Date: July 03, 2003
Appellant(s): DAVIS, LIN

Micheal E. Cox Reg. No. 47,505
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 16, 2007 appealing from the Office action mailed July 28, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims appears on pages 11-17 (of Appeal Brief) of the Appendix to the appellant's brief. The minor errors are as follows: appellant has presented claims 4, 15, and 24 as cancelled claims.

(8) Evidence Relied Upon

6,191,695 B1	Tatsuno	02-2001

6,518,574 B1	Castleman	02-2003
JP 57022947 A	Tatsuno	02-1982

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7, 9-29, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuno [U.S. Patent No. 6,191,695 B1] in view of Tatsuno [JP 57022947] in further view of Castleman [U.S. Patent No 6,518,574 B1].

As for **claim 1**, Tatsuno '695 teaches a fuel dispensing station comprising:

a. A fuel dispenser (10),

b. An ignition source detector (31), and

c. A control unit (30).

The electromagnetic wave sensor taught by Tatsuno '695 is considered analogous to the ignition source detector claimed by applicant. It is well known in the art that it was believed at the time of the Tatsuno '695 invention, that mobile phones and other electromagnetic wave generating devices were capable of producing sparks and/or igniting fires (See www.psc.ca/safety_info/safety_alerts/1999/sa99_18.htm, Canadian Petroleum Safety Council,

Safety Alert #18). The electromagnetic wave sensor is for generating and transmitting a detection signal indicating the presence of an unwanted ignition source, wherein that source comprises electromagnetic waves (column 2, lines 40-58). Tatsuno '695 teaches a control unit which receives the detection signal and generates a control signal for output to the fuel dispenser, wherein the fuel dispenser responds by inhibiting the dispensing of fuel (column 2, lines 59-65 and column 4, lines 10-16). The ignition source detector may be located on the fuel dispenser (Figures 6 and 7) and the inhibiting of fuel from the dispenser may be independent of other fuel dispensers (column 6, lines 13-30 and line 59 – column 7, line 15). Tatsuno '695 does not specifically disclose that the electromagnetic wave detector directly detects an ignition source.

In an analogous art, Tatsuno '947 discloses a fuel dispensing station comprising at least one fuel dispenser and an ignition source detector operable to directly detect an ignition source. The ignition source detector taught in this reference is a fire sensor. It was well known in the art at the time of invention by the applicant that fire sensors are capable of directly detecting ignition sources. It would have been obvious to one of ordinary skill in the art that the detectors taught by both Tatsuno references are interchangeable as both send signals to inhibit the dispensing of fuel at a fuel pump upon the detection of an unwanted source at a fueling station.

Neither Tatsuno '695 nor Tatsuno '947 specifically disclose an ignition source detector operable to directly detect a spark or an ember. In an analogous art for fire detection, Castleman discloses a fire detector with multiple sensors. Castleman teaches an effective method and system for detecting sparks, flames, or fire with little or no interruptions caused by false alarms (column 4, lines 40-43; column 6, line 66- column 7, line 6; and column 8, line 22-28). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant

to modify the fire sensor in the invention of Tatsuno '695 as modified by Tatsuno '947 to include a fire detector with multiple sensors as taught by Castleman because the modification would result in a fuel dispensing station that was sensitive, reliable, inexpensive, and effective in directly detecting sparks, flames, or any ignition that may occur, with little or no interruptions caused by false alarms. Further, the modification would have resulted in a fuel dispensing station for inhibiting the dispensing of fuel upon early detection of a fire or ignition source. Detecting a spark directly would have allowed the system to respond before a full-fledged fire.

As for **claim 2**, Tatsuno '695 discloses a fuel-management unit and at least one communicator, wherein the fuel-management unit receives the detection signal output by the ignition source detector. The fuel-management unit outputs an information signal to inform users of unsafe conditions (column 2, lines 50-58). It is inherent that people are notified of the suspended fuel dispensers.

As for **claim 3**, the fuel dispenser includes a control unit therein, and the detection signals generated when the ignition source is detected is transmitted to the control unit via the fuel-management unit (Tatsuno '695, column 2, lines 59-65). Castleman discloses that a spark may be an ignition source.

As for **claim 5**, Tatsuno '695 teaches that the ignition source detector (electromagnetic wave sensor) may be provided in an area outside the fuel dispensing station where an ignition source would be well sensed, such as a canopy above the fueling station or in each of the fueling units (column 9, lines 40-49). This reasonably meets all of the limitations set forth by the claims.

As for **claims 6 and 7**, Tatsuno '695 teaches that the ignition source detector may be located outside of a fueling station in a location capable of detecting an unwanted ignition source

or within a fueling station (column 2, lines 40-49). It is obvious that the ignition source could be located anywhere on, in, or around the fueling station that would provide the desired results. Location of the ignition source detector is viewed as a matter of design choice.

As for **claims 8, 11, and 25**, Tatsuno '695 does not specifically disclose that the unwanted ignition source comprises a spark, an open flame, or embers. However, as noted above, it was known in the art at the time of the invention by applicant that electromagnetic devices are capable of producing sparks when in the vicinity of fueling stations. The use of these devices ultimately leads to fires or explosions. In Tatsuno '947 a fire sensor is used to detect unwanted ignition sources. It was well known in the art at the time of the invention by the applicant that fire sensors may comprise different types of detectors including IR flame detectors (please refer to patents cited on PTO-892). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to incorporate the fire sensor, including well known components as taught by Tatsuno '947 into the system because the incorporation of the fire sensor would result in a system more capable of detecting and preventing several types of fire hazards at a fuel station.

As for **claims 9, 10, and 12**, Tatsuno '695 discloses that the fuel dispenser temporarily suspends fuel supply in response to a control signal from the control unit. A communicator is provided for outputting a sound and/or light signal. The ignition source detector taught by Tatsuno '695 is an electromagnetic spectrum detector (column 2, line 40 – column 3, line 10).

As for **claim 13**, the claim is interpreted and rejected as stated above in the rejections of claims 1 and 2.

Regarding **claims 14 and 21**, Tatsuno '695 discloses a method of detecting an unwanted ignition source, communicating the detection of the ignition source to a customer or other personnel, and suspending the delivery of fuel in response to the detection of the ignition source (column 2, lines 25-58). Tatsuno '947 and Castleman disclose methods of directly detecting an ignition source (see claim 1). Castleman shows that an ignition source may include a spark.

As for **claims 16 and 17**, the claims are interpreted and rejected as stated above in the rejections of claims 9 and 10.

Regarding **claims 18, 19, 23, and 26**, disclosed is a step of detecting the absence of an ignition source, and resuming the delivery of fuel in reaction to the detection of the absence of an ignition source (Tatsuno '695 column 5, lines 24-37). Tatsuno '695 teaches a re-fuel switch that can be used by a customer or personnel to resume the dispensing of fuel. Tatsuno '695 does not specifically disclose that the resumption of fuel delivery automatically takes place in response to a non-detection signal. However, upon receiving non-detection signal a user should use the re-fuel switch to resume fueling operations. It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant that re-fueling operations could be initiated automatically or manually. The automatic operation would be done to eliminate user error and provide a smoother transition back into the re-fueling operation. Castleman discloses that an ignition source may include a spark.

As for **claim 20**, it would have been obvious to one of ordinary skill in the art at the time of the invention that the re-fueling switch taught by Tatsuno '695 could be provided anywhere at a gas station. One might want the onsite personnel to control the re-fueling switch so that users

located near the ignition source could not attempt to restart the re-fueling operation while an ignition source was still present.

As for **claim 22**, the aforementioned inventions disclose all of the limitations set forth by the claims. Please see claims above for a further explanation of the rejection.

As for **claim 27**, the cited references teach all of the limitations of the claim. Please see claim 1 above.

As for **claim 28**, Tatsuno '695 discloses a fuel-management unit and at least one communicator, wherein the fuel-management unit receives the detection signal output by the ignition source detector. The fuel-management unit outputs an information signal to inform users of unsafe conditions (column 2, lines 50-58). It is inherent that people are notified of the suspended fuel dispensers.

As for **claim 29**, the fuel dispenser includes a control unit therein, and the detection signals generated when the ignition source is detected is transmitted to the control unit via the fuel-management unit (Tatsuno '695, column 2, lines 59-65).

As for **claims 30 and 31**, Tatsuno '695 teaches that the ignition source detector (electromagnetic wave sensor) may be provided in an area outside the fuel dispensing station where an ignition source would be well sensed, such as a canopy above the fueling station or in each of the fueling units (column 9, lines 40-49). This reasonably meets all of the limitations set forth by the claims.

As for **claims 32 and 33**, Tatsuno '695 teaches that the ignition source detector may be located outside of a fueling station in a location capable of detecting an unwanted ignition source or within a fueling station (column 2, lines 40-49). It is obvious that the ignition source could be

located anywhere on, in, or around the fueling station that would provide the desired results. Location of the ignition source detector can be viewed as a matter of design choice.

As for **claims 34, 35, and 36**, Tatsuno '695 discloses that the fuel dispenser temporarily suspends fuel supply in response to a control signal from the control unit. A communicator is provided for outputting a sound and/or light signal. The ignition source detector taught by Tatsuno '695 is an electromagnetic spectrum detector (column 2, line 40 – column 3, line 10).

(10) Response to Argument

Appellant's Arguments:

a. Castleman fails to teach or suggest a detector operable to directly detect a spark or an ember. In particular, Examiner fails to cite any passage in Castleman that teaches or suggests that the wide spectrum detector is operable to detect a spark or an ember.

b. Examiner relies on hindsight to combine three references.

c. The rejection of the claims is improper because there is no showing of the required motivation to combine the three references to reject the claims

Examiner's Responses:

a. In response to applicant's argument that Castleman fails to teach or suggest a detector operable to directly detect a spark or ember, Castleman discloses a process and system for detecting sparks throughout the specification (column 6, line 65-column 7, line 6; column 8, lines 22-27). Further in response to applicant's argument that Castleman fails to teach or suggest a detector operable to directly detect a spark or ember, the test for obviousness is not whether the features of a secondary reference may be

bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

b. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Examiner contends that both Tatsuno references (US 6,191,695 B1, JP 57022947 A) are drawn to a fueling station that is operable to suspend the dispensing of fuel when it is detected that a hazardous condition exists in the vicinity of a fueling unit. Based on the teachings of Tatsuno, a skilled artisan would recognize that a plurality of hazardous conditions might exist at a fueling unit (electromagnetic waves and/or fire conditions). The Castleman (US 6,518,574 B1) reference is used to show that a fire sensor with multiple sensors (for detecting ignition sources such as flames, sparks, fires, and explosives) was known in the art at the time of the invention by the applicant. Using the knowledge available, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to modify the invention of Tatsuno (US 6,191,695 B1) to include a fire-sensing unit capable of detecting a plurality of hazardous conditions. The modification would

have been obvious because it would have increased safety at fueling units by detecting various types of hazardous conditions (particularly fire conditions) and automatically inhibiting the dispensing of fuel until the necessary safety measures were taken.

c. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, please see response b. above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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3/15/07

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